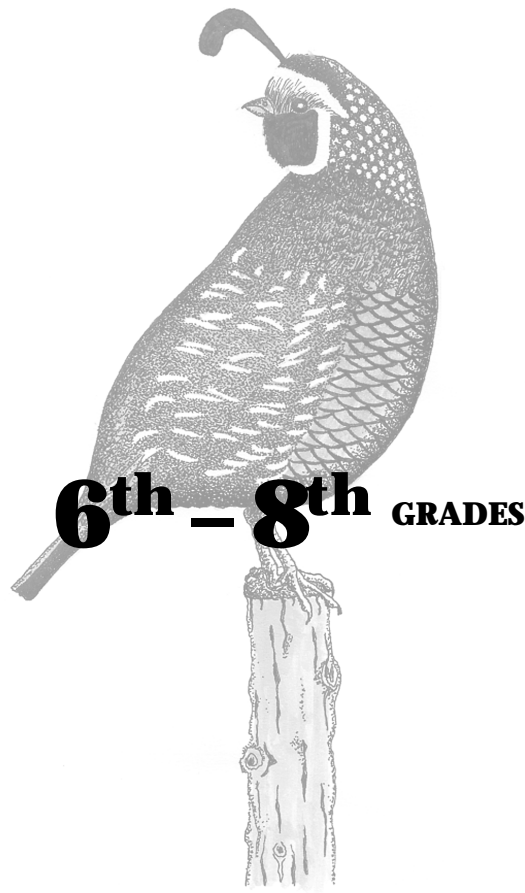




Identifying Resident Birds

at Point Reyes National Seashore



This project was made possible by funding from:



Publishing Information

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The listing of a resource in this curriculum does not presume its endorsement by the National Park Service.

This guide may be obtained by participating in a teacher workshop at Point Reyes National Seashore or through a teacher in-service training at your school.

Teachers are encouraged to offer their feedback by filling out the enclosed evaluation form or contacting Point Reyes National Seashore directly.



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Preface

The intent of these guides is to provide middle school students with the opportunity to observe natural processes at Point Reyes National Seashore so they might take a greater interest in environmental stewardship and science. Teachers from fifteen area schools developed and field-tested seven “Creating Coastal Stewardship through Science” guides for classroom and field trip use. Each guide is carefully designed to facilitate a hands-on learning experience using science and the environment. Natural resources such as Pacific gray whales, northern elephant seals, tule elk, California quail, Douglas iris, and the San Andreas Fault are highlighted because they are easy to identify and to observe. All activities are linked to the California State Science Standards (2000) and the National Science Standards.

You may use this guide alone or in conjunction with other guides. We highly recommend that whenever you use a guide, you use the pre-visit activities to fully prepare the students for the field trip. These activities address student safety, wildlife observation techniques, equipment use, field journal development, and concepts that need to be taught prior to the Park visit. Use of the post-visit activities is also critical to the learning process because they guide the students in making scientific deductions and in developing their environmental stewardship ethics.

Following this preface, you will find background information on the National Park Service and an overview of Point Reyes National Seashore. To provide your students with a better understanding of the place they will be visiting, we recommend you share this information with them. For an in-depth overview of the National Park Service, visit our website at **www.nps.gov**.

Point Reyes National Seashore provides outstanding opportunities for learning about natural and cultural resources. There are also exceptional educational opportunities provided by Park partners such as the Point Reyes Bird Observatory, Audubon Canyon Ranch, and Point Reyes National Seashore Association. To learn more about the Park and our partners, visit our website at **www.nps.gov/pore**.



THE NATIONAL PARK SERVICE

The National Park Service cares for special places saved by the American people so that all may experience our heritage.

Experience Your America

On August 25, 1916, President Woodrow Wilson signed the act creating the National Park Service, a new federal bureau in the Department of the Interior responsible for protecting the 40 national parks and monuments then in existence and those yet to be established.

This “Organic Act” of 1916 states that “the Service thus established shall promote and regulate the use of Federal areas known as national parks, monuments and reservations . . . by such means and measures as conform to the fundamental purpose of the said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.”



Olympic National Park



Golden Gate National Recreation Area

The National Park Service still strives to meet these original goals, while filling many other roles as well: guardian of our diverse cultural and recreational resources; environmental advocate; world leader in the parks and preservation community; and pioneer in the drive to protect America’s open space.

The National Park System of the United States comprises over 379 areas covering more than 83 million acres in 49 states, the District of Columbia, American

Samoa, Guam, Puerto Rico, Saipan, and the Virgin Islands. Although not all parks are as well known as the Grand Canyon and Yellowstone, all are areas of such national significance that they have been included in the National Park Service — ancient ruins, battlefields, birthplaces, memorials, recreation areas, and countless other wonders. Point Reyes National Seashore is one of ten national seashores.



Mesa Verde National Park



Grand Canyon National Park

The future of the National Park System lies in understanding and protecting its meanings, values, and resources. Each part of the system represents the United States and a part of our heritage. Preservation of individual sites and the entire system will ensure the essence of quality remains in our lives and the lives of all future generations.



POINT REYES NATIONAL SEASHORE



Bruce Farnsworth

Point Reyes National Seashore was established to preserve and protect the natural and cultural features and natural ecosystems along the diminishing undeveloped coastline of the western United States. Located just an hour's drive from a densely populated metropolitan area, the Seashore is a sanctuary for countless plant and animal species. With half of Point Reyes National Seashore designated as wilderness, it provides a sanctuary for the human spirit—for discovery, inspiration, solitude, and recreation—and a reminder of the human connection to the land.

Point Reyes National Seashore comprises over 71,000 acres, including 32,000 acres of wilderness area. Estuaries, windswept beaches, coastal scrub, coastal grasslands, salt marshes, and coniferous forests create a haven of 80 miles of unspoiled and undeveloped coastline located just an hour's drive from an urban area populated by seven million people. Abundant recreational opportunities include 140 miles of hiking trails, backcountry campgrounds, and numerous beaches.



Sue Van Der Wal

The San Andreas Fault separates the Point Reyes Peninsula from the rest of the North American continent. Granite bedrock found here and not found again until the Sierra Nevada range suggests the Peninsula is geologically dynamic. According to geologists, the land that is now called Point Reyes has moved some 300 miles northwest over a period of 100 million years and is still moving.



Rich Salkin

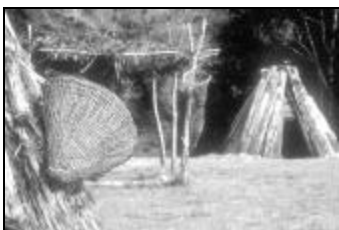
As wildland habitat is developed elsewhere in California, the relevance of Point Reyes as a protected area with a notably rich biological diversity increases. Over 45% of North American avian species and nearly 18% of California's plant species are found here. Point Reyes also contains some examples of the

world's major ecosystem types. For this reason, and because Point Reyes is dedicated to the conservation of nature and scientific research, it was recognized in 1988 by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) Man and the Biosphere program and named as part of the Central California Coast Biosphere Reserve.



Bruce Farnsworth

The cultural history of Point Reyes spans many lives and ways of living with the land. The Coast Miwok people are the first known residents of this peninsula. Archeologists have identified over 100 village sites in the Seashore and cultural traditions are still celebrated in the Park annually. Overlapping the Coast Miwok were Mexican land grantees, lighthouse keepers, and lifesaving station crews. To this day, agricultural operations that were built near the turn of the twentieth century continue within the Seashore's pastoral zone.



NPS Collection



Educational Opportunities at POINT REYES NATIONAL SEASHORE

Point Reyes National Seashore provides an outdoor classroom and learning laboratory for the study of geological and ecological processes and changing land-use values in which a greater understanding of and caring for public lands can be fostered.

Ranger-led Curriculum-based Education Programs

Reservations for Ranger-led programs are requested in writing and assigned on a first-come, first-served basis. Visit nps.gov/pore for the reservation form and calendar.

K-2 Students explore the natural resources of the Seashore with Park Rangers in the Bear Valley area or in their classroom.

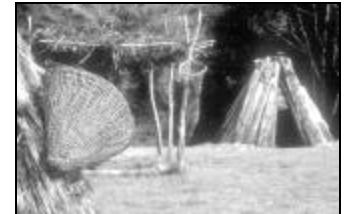


NPS Collection

3-4 Students immerse themselves in the Coast Miwok culture by completing a comprehensive curriculum and visiting the Coast Miwok cultural exhibit, Kule Loklo.



NPS Collection



NPS Collection

4 Students revisit the days of early lighthouse keepers while operating the original Point Reyes Lighthouse clockwork with Park Rangers.



NPS Collection

5 Students study the oceanic influences on the Point Reyes Peninsula by completing a classroom curriculum and viewing gray whales and elephant seals with Park Rangers.

6-8 Students participate in Ranger-led stewardship activities such as habitat restoration, water quality monitoring, and beach cleanups.

Ranger-led Training Programs

9-12 Students become DOCENTS to assist middle school teachers with classroom teaching and use of scientific research tools on Seashore field trips (service learning credits earned).



NPS Collection

Students become RESEARCH ASSISTANTS at the Pacific Coast Learning Center by participating in the inventorying and monitoring of Seashore resources.

Teachers Teacher workshops are offered throughout the year for existing Park curricula and for field trip planning. Visit the Seashore's website at www.nps.gov/pore for a calendar of workshops.



NPS Collection

Classroom and Field Trip Curriculum

Based on the National and State Science and Social Science Standards

3-4



Teacher packets are available for field trips to the recreated Coast Miwok village, Kule Loklo, located near the Bear Valley Visitor Center.

The “Creating Coastal Stewardship through Science” middle school curricula are available to teachers who attend a one-day workshop at Point Reyes or a teacher in-service training.

6-8



Completion of the *Identifying Resident Birds Curriculum*, as a companion to a birdwatching field trip, will enable students to observe and identify different bird species, their habitats, and their behaviors. A visit to Point Reyes Bird Observatory will also enable students to observe bird banding and netting and to understand the most common threats to bird survival.



Completion of the *Monitoring Creek Health Curriculum*, as a companion to a Ranger-led creek program, will enable students to observe and understand the complexity and sensitivity of creek habitats and their role in protecting them.



Completion of the *Discovering Northern Elephant Seals Curriculum*, as a companion to an elephant seal viewing field trip, will enable students to observe and understand the amazing adaptations and behaviors of Northern elephant seals.



Completion of the *Defining Habitats Curriculum*, as a companion to a Park field trip, will enable students to observe and understand the complex land and ocean habitats of the Point Reyes Peninsula and their roles in habitat protection.



Completion of the *Uncovering the San Andreas Fault Curriculum*, as a companion to a geology field trip, will enable students to observe and understand the existence of the San Andreas Fault and the implications it has for area residents.



Completion of the *Investigating Tule Elk Curriculum*, as a companion to an elk viewing field trip, will enable students to observe and understand tule elk behaviors and the issues that surround their management.



Completion of the *Observing Pacific Gray Whales Curriculum*, as a companion to a whale watching field trip, will enable students to observe and understand gray whale adaptations and behaviors, and the factors that influence their survival.

Educational Facilities



The **Historic Lifeboat Station** is available to educational groups for overnight use. Nightly fees are charged. Group size must be under 25 (including chaperones). Reservations are made on a first-come, first-served basis by completing the boathouse form on our website at www.nps.gov/pore.



The **Clem Miller Environmental Education Center** is an overnight facility available by lottery to school groups visiting for multiple-night stays September through May. The facility is used for summer camps during the summer months. Fees are charged. For information, contact Point Reyes National Seashore Association at (415) 663-1200, website www.ptreyes.org.



The **Pacific Coast Learning Center** is a day-use facility located on Highway 1. This facility is used by researchers and students to study the natural and cultural resources of the Seashore.



The **Bear Valley Visitor Center** is a day-use facility open to school groups Monday through Friday from 9 A.M. to 5 P.M. Exhibits on natural and cultural resources are found here. Books, brochures, and other educational materials are available.



The **Ken Patrick Visitor Center** is located on Drakes Beach, approximately 30 minutes from the Bear Valley Visitor Center. This facility is open year-round on weekends and holidays from 10 A.M. until 5 P.M. Ranger-led elephant seal programs meet at this Visitor Center. Exhibits and a 150-gallon saltwater tank are located here. Books, brochures, and other educational materials are available.



The **Lighthouse Visitor Center** is located on the outermost tip of the Peninsula, approximately 45 minutes from the Bear Valley Visitor Center. This facility is open Thursday through Monday from 10 A.M. until 4:30 P.M. (closed Tuesdays and Wednesdays). Ranger-led whale programs and lighthouse tours meet at this Visitor Center. Exhibits on maritime history and whale biology are located here. Books, brochures, and other educational materials are available.



The **Lighthouse** is located below the Lighthouse Visitor Center at the bottom of a 308-step staircase. The lens room is usually open from 2:30 P.M. until 4 P.M. Thursday through Monday or as weather and staffing permit. High winds always close the lens room. Space in the lens room is limited, so reservations are required for groups. Call (415) 464-5100 to confirm existing weather conditions.

Group Camping/Overnight Opportunities

* This listing is provided for your convenience and does not constitute a recommendation or endorsement of any of these facilities.



All overnight camping in **Point Reyes National Seashore** requires a permit and advance reservations. Group sites are very limited and in high demand. Sky, Coast, and Wildcat Camps are all backcountry campgrounds that require hiking to access them. A fee is charged. For more information, visit the Seashore's website at **www.nps.gov/pore**.

The **Point Reyes Hostel** offers a dormitory-style group cabin with a fully equipped kitchen and showers. For additional information and reservations, call (415) 663-8811 during office hours 7:30 to 9:30 A.M. and 4:30 to 9:30 P.M.

Samuel P. Taylor State Park, located 6 miles east of the Seashore on Sir Francis Drake Boulevard, offers campsites for groups. A fee is charged. Reservations are highly recommended. For more information, visit the reservations website at **www.reserveamerica.com**.

Olema Ranch Campground is located half a mile from Seashore headquarters on Highway 1. It is privately owned. Several large group sites are available. Fees are charged. For more information, call (415) 663-8001.

The **Marconi Center** is located 8 miles north of Seashore headquarters on Highway 1. This facility is operated by California State Parks. Lodging, conference rooms, and catered meals are provided for a fee. For more information, call 1 (800) 970-6644 or visit the website at **www.marconiconfctr.org**.



National Park
FOUNDATION

Creating
**COASTAL
STEWARDSHIP**
through Science

EXON



Identifying Resident Birds

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Creating
**COASTAL
STEWARDSHIP**
through Science



Identifying Resident Birds

Teacher Preparation

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Identifying Resident Birds



Teacher Preparation

Point Reyes National Seashore hosts over 470 species of birds, nearly forty percent of all the species found in North America. Migratory and resident birds use Point Reyes in many ways. The Peninsula serves as a breeding ground, a refueling station, and a place for birds to winter. All of this contributes to the phenomenal diversity and abundance found here on a year-round basis. The American Bird Conservancy has named Point Reyes National Seashore as one of “the most 100 globally important bird sites.”

Completion of this unit, as a companion to your Park field trip, will enable students to understand the link between healthy habitats and healthy bird populations for the future.

Considerations

When: Year-round.

Where: Several trails in the immediate area of Bear Valley Visitor Center are ideal for a field visit to view birds (Earthquake Trail, Woodpecker Trail, Bear Valley Trail, or Rift Zone Trail). If you are staying at the Clem Miller Environmental Education Center there are a variety of additional nearby trails and habitats to view terrestrial or shore birds. Contact the Clem Miller director for further suggestions.

How: This unit may be used independently of all other units. If you want to use an additional unit during your visit, we suggest "Defining Habitats" to give students a more complete understanding of other resources at Point Reyes National Seashore and their relationship to resident or migratory birds.

Creating
COASTAL
STEWARDSHIP
through Science



Weather: The chart below lists average climate expectations based on previous year's data. The weather is subject to change quickly and can vary dramatically from different locations within the Seashore on the same day.

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Temperature												
Normal Daily Maximum	53	55	55	57	60	62	64	64	65	62	58	54
Normal Daily Minimum	41	42	42	43	47	50	51	52	51	48	45	42
Extreme High	78	85	80	92	94	99	96	96	103	96	81	79
Extreme Low	21	26	29	32	32	39	39	42	39	32	29	18
Precipitation												
Normal	12.0	9.0	8.0	4.0	3.0	1.0	0.3	0.8	2.0	4.0	9.0	12.0
Maximum	20.0	16.0	15.0	11.5	8.0	4.0	2.5	6.0	7.0	13.0	18.0	19.0

Seasonal Events: Consult the chart below to assess which months may be best for a class visit to Point Reyes National Seashore.

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Temperature												
Normal Daily Maximum	53	55	55	57	60	62	64	64	65	62	58	54
Normal Daily Minimum	41	42	42	43	47	50	51	52	51	48	45	42
Extreme High	78	85	80	92	94	99	96	96	103	96	81	79
Extreme Low	21	26	29	32	32	39	39	42	39	32	29	18
Precipitation												
Normal	12.0	9.0	8.0	4.0	3.0	1.0	0.3	0.8	2.0	4.0	9.0	12.0
Maximum	20.0	16.0	15.0	11.5	8.0	4.0	2.5	6.0	7.0	13.0	18.0	19.0

Chaperone Preparedness and Assistance

The success of your field trip will depend on your ability to actively prepare and involve your parent chaperones in the field trip activities. Without adult guidance, many of the students will not complete their field journals. It is essential that your field trip have as much structure as your classroom lessons. To accomplish this, we recommend that you assign each parent to a small group of students. Inform each parent that they are responsible for assisting their students with the field observations and with the completion of journal questions. Provide each chaperone with their own copy of the student journals and encourage them to complete it with the students. Also, have each chaperone carry a pair of binoculars and assist students with their use.



Suggested Lesson Plan

Total time needed: 13+ hours

PRE-VISIT		Time Needed: 7 hours
Activity #1	How Can I Learn About Birds at Point Reyes National Seashore? <i>Students use a newspaper and vocabulary list to complete questions and activities about resident birds.</i>	2 hours
Activity #2	What Resident Birds Can I Easily Identify? <i>Student's research and present information about specific resident birds and their identification.</i>	2 hours
Activity #3	What Can We Expect on Our Field Trip to Observe Birds? <i>Students prepare for field trip by reviewing expectations and creating field journals.</i>	1 hour
Activity #4	Safety and Stewardship Challenge <i>Proper behaviors around National Park resources are examined in a game format.</i>	1 hour
Activity #5	How Do I Use Binoculars? <i>A successful field trip starts by ensuring all students know how to use binoculars.</i>	1 hour
ON-SITE		Time Needed: 2 hours
Field Journal	What Is the Diversity of Birds Found at Point Reyes National Seashore? <i>Students complete their field journals by performing various surveys and general observations.</i>	2 hours
Optional Onsite Activity	How Can I Capture My Experiences in a Story, Poem, or Drawing? <i>This is an optional field journal sheet for students to explore emotional connections to the resources.</i>	30 min.
Optional Field Visit	How Can I Participate in Bird Banding at the Point Reyes Bird Observatory? <i>A trip to the Observatory can be scheduled on the same day as your trip to the National Seashore or as a separate trip.</i>	2 hours
Optional Onsite Activity	How Can We Inspire Others to Protect Birds and Their Habitat? <i>Classes may choose to videotape segments of field trip to use as a tool for teaching others.</i>	15 min.
POST-VISIT		Time Needed: 2+hours
Activity #1	What Can We Learn from Our Field Journals? <i>Students compile data from their field journals to draw conclusions between what they have previously learned in class and what they experienced in the field.</i>	2 hours
Activity #2	How Can I Choose and Complete the Best Stewardship Project? <i>Students assess their skills and develop action plans to complete a project that will benefit birds and their habitat.</i>	time varies



Field Trip Logistics

Things To Remember		
<i>Students need:</i>	<i>Teachers need:</i>	<i>Chaperones need:</i>
<input type="checkbox"/> rain gear	<input type="checkbox"/> rain gear	<input type="checkbox"/> rain gear
<input type="checkbox"/> warm, layered clothes	<input type="checkbox"/> warm, layered clothes	<input type="checkbox"/> warm, layered clothes
<input type="checkbox"/> gloves and hat	<input type="checkbox"/> gloves and hat	<input type="checkbox"/> gloves and hat
<input type="checkbox"/> sunscreen and sunglasses	<input type="checkbox"/> sunscreen and sunglasses	<input type="checkbox"/> sunscreen and sunglasses
<input type="checkbox"/> bag lunch with drink	<input type="checkbox"/> bag lunch with drink	<input type="checkbox"/> bag lunch with drink
<input type="checkbox"/> water	<input type="checkbox"/> water	<input type="checkbox"/> water
<input type="checkbox"/> waterproof boots or tennis shoes	<input type="checkbox"/> waterproof boots or tennis shoes	<input type="checkbox"/> waterproof boots or tennis shoes
<input type="checkbox"/> clipboard with field journal and pencil	<input type="checkbox"/> map with directions	<input type="checkbox"/> map with directions
<input type="checkbox"/> permission slip	<input type="checkbox"/> pencil sharpeners and extra pencils	
	<input type="checkbox"/> teacher backpack and field trip kits from Bear Valley Visitor Center	
	<input type="checkbox"/> first aid kit	
Optional:		
<input type="checkbox"/> small backpack	<input type="checkbox"/> small backpack	<input type="checkbox"/> small backpack
<input type="checkbox"/> binoculars	<input type="checkbox"/> binoculars	<input type="checkbox"/> binoculars
	<input type="checkbox"/> camcorder/ camera	<input type="checkbox"/> camcorder/ camera

Other Things to Remember:

- Have students bring a bag lunch since you will be visiting during lunch time.
- If you have a student with accessibility concerns, please call the Park for suggestions.
- Students need warm, waterproof clothing most of the year. Sunscreen is needed on most days. Students should always be prepared for all types of weather.
- Have the students wear long pants and closed-toe shoes, preferably tennis shoes.
- Binoculars will assist the students in viewing the wildlife. These may be checked out from the Bear Valley Visitor Center. If you plan to use this equipment, it is essential that you train the students to use binoculars before their visit. See the enclosed binocular lesson.
- Bathrooms, drinking water, and the Bird Kits are available at the Bear Valley Visitor Center. This should be your first stop when visiting Point Reyes National Seashore.



Evaluation Process

We need your help! Since this guide was designed for your use, only your feedback will make it work. Following the unit overview is an evaluation form. Please complete and return it to:

Point Reyes National Seashore
Division of Interpretation
Point Reyes, CA 94956

If you prefer to be interviewed over the phone about your experience, please phone (415) 464-5139 and request to speak with the project coordinator.

In addition to the evaluation forms, we encourage other types of feedback. Please send any of the following items from your students:

1. Videotape or photos of park field trip
2. Completed student journals
3. What Can We Learn from Our Field Journal? completed student sheets
4. Any completed stewardship activities, including posters, murals, newsletters, etc.
5. A class portfolio illustrating various pre-visit activities, photographs, or drawings
6. Any completed classroom projects or photographs of projects
7. Any other ways to illustrate student feedback

Please indicate if these items need to be returned. We will use them to create a project library, highlight classroom efforts on our website and in Park publications, and complete evaluations of student outcomes.

Reservations

To avoid conflicts with other groups and to be notified about any unusual closures, please call the Park to notify us about your field trip date and time. See the reservation form following this unit overview.

Bird Kit Contents

Kits are available for checkout at the Bear Valley Visitor Center. These are available on a first-come, first-served basis.

Bird Kit contents:

- ☐ 20 pairs of Binoculars
- ☐ assorted field guides
- ☐ first aid kit
- ☐ clipboards
- ☐ spotting scope



Teacher Preparation

California Science Standards Links

	"Identifying Resident Birds" Unit							
	Pre-Visit					On-Site	Post-Visit	
	#1	#2	#3	#4	#5	Field Journal	#1	#2
Sixth Grade								
1								
2								
3								
4								
5	a,b,-e	c,e				a,b,e	e	
6								
7	b,c	b	a,h	b	b	b	b,d,-e	
Seventh Grade								
1								
2								
3	e							
4								
5	a,d					a		
6					b,d			
7	a,d	a,b	a	a	a	a	a,b,-c	a,b,-c,e
Eighth Grade								
1								
2								
3								
4								
5								
6								
7								
8								
9	b		b				b	





Correlations to "A Child's Place in the Environment"
California's State Approved Environmental Education Curriculum

	"Identifying Resident Birds" Unit							
	PRE-VISIT					ON-SITE	POST-VISIT	
	#1	#2	#3	#4	#5	Field Journal	#1	#2
A Child's Place in the Environment: Grade 6 Lessons								
What Are Some Components of an Ecosystem?	x		x			x		
What Role Does Diversity Play in an Ecosystem?	x	x				x	x	
How Does the Sun's Energy Flow Through an Ecosystem?						x		
What Interrelationships and Niches Can Be Identified in an Ecosystem?						x	x	
What Cycles Exist in an Ecosystem and How Do They Sustain an Ecosystem?						x		
What Examples of Ecological Principles Can Be Observed in an Ecosystem?	x					x		
What Are the Components and Relationships of Human Communities and How Do They Compare to Ecosystems?								
What Are Some Limiting Factors in Human Communities and in Ecosystems?							x	
How Do Energy Sources Used in Human Communities Compare to Those Used in Ecosystems?								
How Can Organic Solid Waste in Human Communities Be Composted?								
How is Land Used by Our Community and How Are Land-Use Decisions Made?								
How Can the Disposal of Solid Waste Affect the Quality of the Environment?								
How Does the Motor Vehicle Transportation System Affect the Environment?								
How Do Human Beings Affect Watersheds?								
What Human Actions Enhance, Protect, and Sustain the Quality of the Environment?	x		x	x				x
What Have Communities Done to Become More Sustainable?								x
What Projects Can Students Implement to Make Their Classroom and School or Community More Sustainable?								x



Acknowledgments

This unit was written by area teachers, park rangers, scientists, and area naturalists. Special thanks to the following people:

Workshop Participants

Melissa Pitkin, Education Director
Rich Stallcup, Founder and Ornithologist
Trudie Behr-Scott, Teacher, Hill Middle School, Novato
Sylvia Terry, Teacher, Pine Crest School, Sonoma
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Unit Design

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Christie Denzel Anastasia

Special Thanks

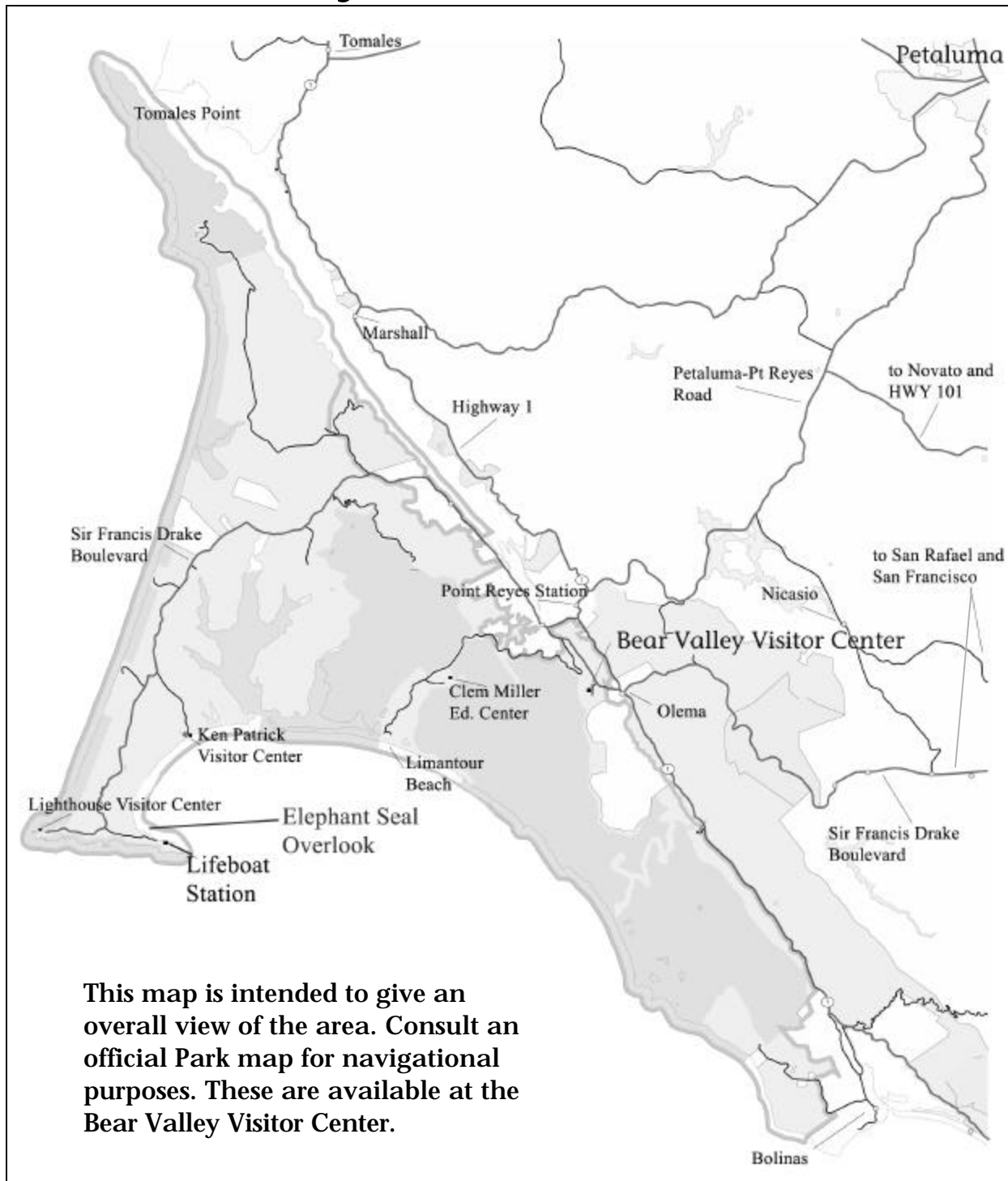
Lisa Halton, Artist
Thomas Wood Parsons, Cartographer
Rahel Fischer, copyeditor
Sue Abbott, Education Specialist, Point Reyes Bird Observatory
Dawn Adams, Biologist, National Park Service



Point Reyes National Seashore



Attachment



Approximate Driving Times/Distances

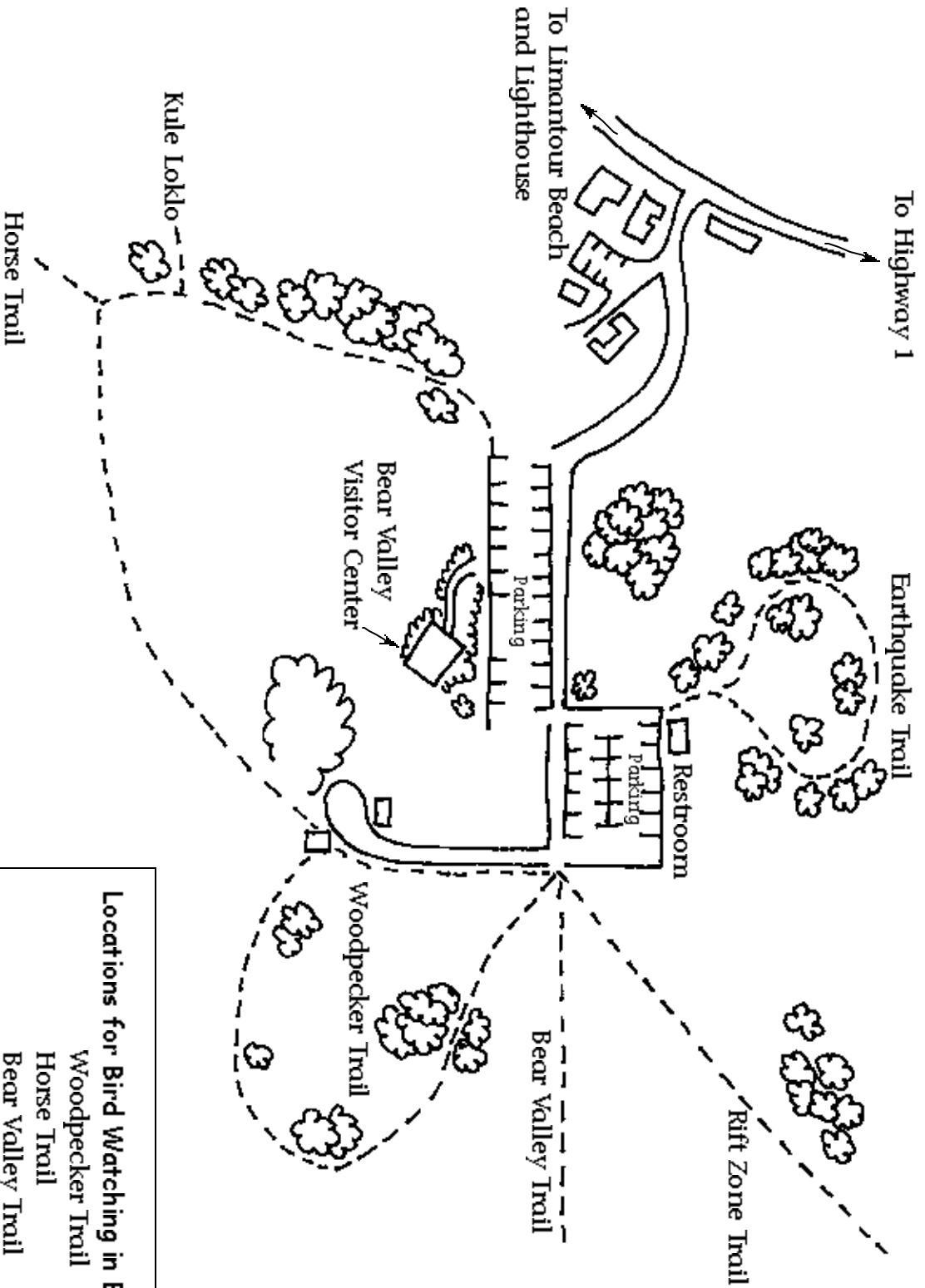
Petaluma to Bear Valley VC	40 min./19 miles
Novato to Bear Valley VC	40 min./19 miles
San Anselmo to Bear Valley VC	30 min./20 miles
Bear Valley VC to Limantour Beach	20 min./9 miles
Bear Valley VC to Tomales Point	30 min./19 miles
Bear Valley VC to Ken Patrick VC	30 min./15 miles
Bear Valley VC to Elephant Seal Overlook	45 min./22 miles

POINT REYES NATIONAL SEASHORE





Bear Valley Visitor Center Area Map



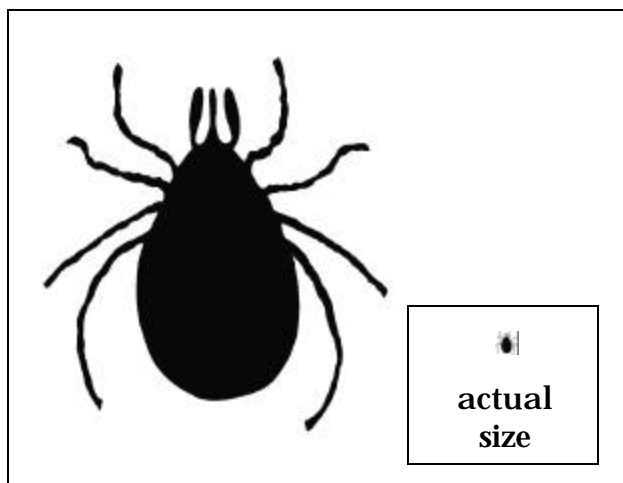
Locations for Bird Watching in Bear Valley:

- Woodpecker Trail
- Horse Trail
- Bear Valley Trail
- Kule Loklo
- Rift Zone Trail



Lyme Disease, Stinging Nettle, and Poison Oak

Lyme disease is an illness caused by bacteria transmitted to people by tick bites. Not all ticks carry the disease. Field studies in Marin County show that 1–2% of the western black-legged ticks carry Lyme disease. Since there are several other species of ticks in Marin, the odds of a tick bite producing Lyme disease is less than 1 in 100. Even so, Lyme disease can be severe; it is important to understand the prevention and symptoms.



Symptoms:

arthritis and joint pain
lethargy
heart problems
pain/limping
fever
kidney problems
depression
bull's-eye rash (50% of victims)

Tick species in California include:

Western black-legged tick and Pacific coast tick (West Coast)
Lone star tick and American dog tick (throughout U.S.)

How to avoid tick bites:

- Wear light-colored, long-sleeved clothes so you can more easily see the ticks.
- Tuck shirt into pants and pants into socks to keep ticks away from your skin.
- Stay on trails.
- Apply an insect repellent, labeled for ticks, to shoes, socks, and pants.
- Check yourself completely after a hike. Closely check any skin irritation. Ticks anesthetize the skin before biting so you'll seldom feel the original bite.

What to do if bitten:

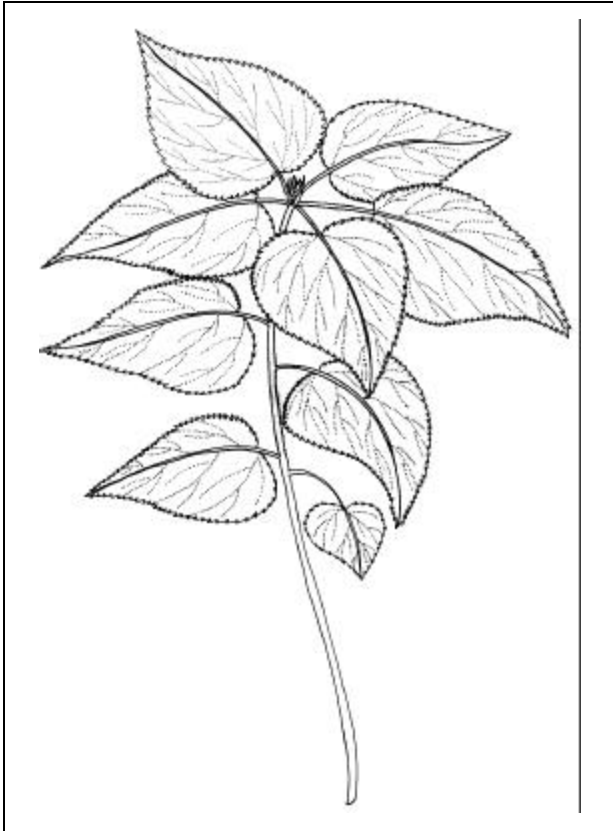
- Use tweezers to grasp tick at point of attachment, as close to skin as possible. Gently pull tick straight out.
- Save tick, notify your doctor.
- Don't panic— ticks need to be embedded from 24 to 48 hours to transmit bacteria. The ticks that transmit Lyme disease are usually in a developmental phase in which they are smaller than the head of a pin.

References:

Ticks and Lyme Disease in the National Parks
Lyme Disease Foundation/www.lyme.org

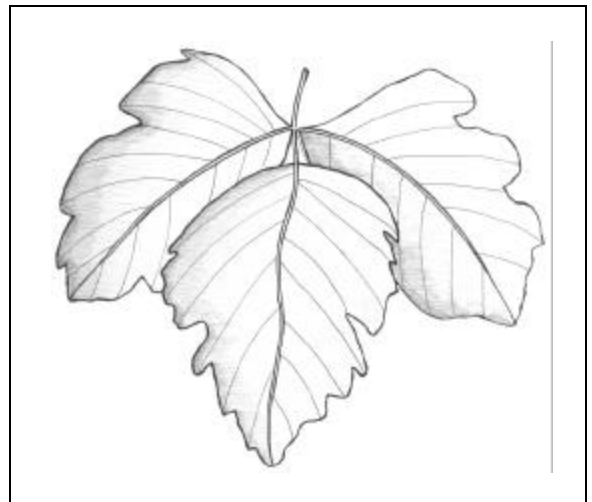


Lyme Disease, Stinging Nettle, and Poison Oak



Stinging nettle is native to Europe, but grows at Point Reyes National Seashore. It can cause a painful rash that stings for up to 12 hours after brushing up against the plant. A topical analgesic (used to treat poison ivy or bug bites) can be applied to help alleviate the sting. Study the picture and have someone point out the plant in the Seashore to aid in its identification.

Poison oak usually causes an itchy rash if you are sensitive to it. You can get a rash by touching the plant, its leaves, or its roots. You can also contract poison oak by petting your dog (if the oils are on its coat) or by touching clothing that has touched poison oak. Rashes may occur several days after the initial contact with the plant. Severe rashes may affect the lungs. If you have difficulty breathing, call 911 or go to the nearest emergency room immediately. Preventive topical ointments are available to help avoid reactions to poison oak. Learn to recognize the compound leaves with a shiny appearance.



Creating Coastal Stewardship through Science



Reservation

If you are planning a trip to Point Reyes National Seashore to use this curriculum, please notify the Park to avoid conflicts with other groups and to be notified about any unusual closures. Mail this form at least 2 weeks in advance (fold in thirds and affix postage) or call (415) 464-5139, to leave a message.

Teacher Name: _____

School Name: _____

School Address: _____

City/State: _____ Zip Code: _____

School Phone: _____ School Fax: _____

Email: _____

Grade: _____ Class Size: _____

Home Phone: _____

Field Trip Options

Monitoring Creek Health

Observing Pacific Gray Whales

Discovering Northern Elephant Seals

Defining Habitats

Investigating Tule Elk

Uncovering the San Andreas Fault

Identifying Resident Birds

Field Trip Preferences

Field Trip Topic

Dates

Time

(list three in order of preference)

1. _____

2. _____

Comments

_____ Confirmation Letter

_____ Materials Sent



**National Park Service
Point Reyes National Seashore
Division of Interpretation
attn: Education Program Coordinator
Point Reyes Station, California 94956**



Creating Coastal Stewardship through Science

Please help us develop and improve our programs by taking a few minutes to complete this form. This evaluation form is preaddressed, but needs to be folded in thirds and provided with postage. If you prefer, e-mail comments to:

PORE_Education@nps.gov

Name: _____ School Name: _____

School Address: _____

City/State/Zip Code: _____

School Phone: _____ School Fax: _____

Email: _____

Class Size/Grade: _____

Date of Visit: _____ Program/Location: _____

Getting Your Visit Set Up

Do you have any suggestions to make logistics easier? (maps, directions, reserving programs)

Curriculum Materials

Which lessons were the most effective?

Relevance of content to my students and curriculum:

Grade appropriateness?

Program Assessment

How does this program fit into California/National Standards and your personal education program?

Strengths/weaknesses of program?

Best part of experience?

What is the level of support at your school for this program?

What could the National Park Service do to improve your education program?

Overall, how would you respond if a colleague asked about this program?

Highly recommended Recommended Recommended with some qualifications
Not recommended



**National Park Service
Point Reyes National Seashore
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Banding	placing a band, like a bracelet, on a bird's leg. The band has a unique number not shared by another bird of the same species, thus allowing biologists to identify that bird as an individual. Banding a bird is like giving it its own name.
Call	a simple sound, often one or two notes, that a bird makes when alarmed or frightened, when flying, when trying to find its flock, or when communicating with another bird
Conservation	the use of a natural resource in a way that assures its continued availability
Crown	the top of a bird's head
Display	a pattern of behavior shown by birds to one another that often includes ruffling feathers, flapping wings, swaying back and forth, raising crest feathers, aerial maneuvers, chasing another bird, etc. There are two main types of displays: territorial displays or breeding displays to attract mates.
Diversity	the array of species present and their spacial distribution
Endangered species	a species in danger of extinction throughout all or a significant part of its range
Eye ring	a circle of color that looks like a ring around the eye of a bird
Flocking	certain species of birds do some of the behaviors listed above together in a group. When birds of the same species, (or different species) group together and perform certain behaviors, they are called a flock.
Forage	to search for food. The way a bird obtains food (i.e., picking up things from the ground, off a tree etc.).
Guano	a substance composed chiefly of the dung of seabirds or bats, accumulated along certain coastal areas or in caves and used as fertilizer
Habitat	a plant or animal's home - all the living and nonliving things in its environment. Examples are forest, coastal scrub, intertidal zone.



Vocabulary

Mandibles	the upper and lower parts of a bird's bill
Migrant	a bird that moves seasonally from one region to another, usually for breeding or feeding
Mist Net	a large net approximately 36 feet long and 6 feet high made of a fine, lightweight material that allows field biologists to catch birds safely. Birds fly into the nets because they cannot see them and are gently held in the net until the biologists remove them, no longer than a half-hour later.
Moustache	a stripe of color, or elongated feathers, that looks like a mustache on the side of the head of a bird
Perch	a bird sitting on a branch, fencepost, or some other type of perch
Plumage	the feathers on a bird
Population	a group of individuals of the same species living in one area
Predator	any organism that exists by preying upon or hunting other organisms
Preening	the act that a bird performs in the care of its feathers; this may involve cleaning, realigning, and applying oil to its feathers. Birds use their beaks to "clean" and spread the oils from their glands onto their feathers to help protect and waterproof them.
Primaries	the set of flight feathers situated on the distal (furthest from the body) segment of a bird's wing.
Raptor	a bird of prey (hawk, owl, falcon) that has a sharp hooked bill and claws or talons on its feet adapted for seizing and tearing prey
Resident	birds that spend all year in one place and do not migrate
Rump	located near the tail feathers of a bird
Secondaries	the set of flight feathers on the second segment of a bird's wing



Singing	singing is different than calling because it is usually a series of notes forming a long "song". Singing is usually only done by male songbirds to announce his territory to other males, and to attract females
Site fidelity	faithfully returning to the same location year after year. For example, a bird may return to the same forest or beach to nest and raise its young each year.
Song	a bird song is usually performed only by male birds during the breeding season. Male birds sing to attract mates and defend territories. Some birds sing on migration or when they first arrive on wintering grounds
Stewardship	taking care of the environment by being involved; taking action and participating in clean ups and education programs, helping others become more aware and making responsible choices
Tarsus	leg bone
Territorial	defending a resource such as an area of land for breeding and/or feeding
Undertail covert	feathers concealing the bases of a bird's tail feathers
Vagrant	a bird that may have made errors in navigation and thus is unexpected in a specific area
Wing bar	a line of contrasting color along a bird's wing
Wing covert	the feathers that cover the bases of the flight feathers in birds